

I CLAIM:

1. A coating powder having a low curing temperature comprising an acid functional acrylic resin having an acid number between about 40 and 220, triglycidyl isocyanurate, and a curing catalyst comprising tetrabutyl ammonium bromide, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
2. A coating powder having a low curing temperature comprising an acid functional acrylic resin having an acid number between about 40 and 220, triglycidyl isocyanurate, and an inert nitrogen containing compound which is a member selected from the group consisting of melamine, urea, benzoguanamine, dicyandiamide, derivatives of melamine, derivatives of urea, derivatives of benzoguanamine, and derivatives dicyandiamide, said compound being present in an effective amount to enhance the electrostatic chargeability of said coating powder, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
3. The coating powder of claim 2 further comprising tetrabutyl ammonium bromide as a curing catalyst.
4. A powder coated article comprising a substrate coated with a cured coating powder comprising an acid functional acrylic resin having an acid number between about 40 and 220, triglycidyl isocyanurate, and a curing catalyst comprising tetrabutyl ammonium bromide, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
5. A powder coated article comprising a substrate coated with a cured coating powder comprising an acid functional acrylic resin having an acid number between about 40 and 220, triglycidyl isocyanurate, and an inert nitrogen

- containing compound which is a member selected from the group consisting of melamine, urea, benzoguanamine, dicyandiamide, derivatives of melamine, derivatives of urea, derivatives of benzoguanamine, and derivatives dicyandiamide, said compound being present in an effective amount to enhance the electrostatic chargeability of said coating powder, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
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6. The powder coated article of claim 5 further comprising tetrabutyl ammonium bromide as a curing catalyst.
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7. A process for coating a substrate comprising:
- (a) providing a coating powder comprising an acid functional acrylic resin having an acid number between about 40 and about 220, triglycidyl isocyanurate, and a curing catalyst comprising tetrabutyl ammonium bromide, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0;
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- (b) applying an electrostatic charge to said powder;
- (c) contacting said substrate with said electrostatically-charged powder to form a powder coating on said substrate; and
- (d) curing said powder to form a cured coating on said substrate.
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8. A process for coating a substrate comprising:
- (a) providing a coating powder comprising an acid functional acrylic resin having an acid number between about 40 and about 220, triglycidyl isocyanurate, and an inert nitrogen containing compound which is a member selected from the group consisting of melamine, urea,
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- benzoguanamine, dicyandiamide, derivatives of melamine, derivatives

of urea, derivatives of benzoguanamine, and derivatives dicyandiamide, said compound being present in an effective amount to enhance the electrostatic chargeability of said coating powder, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0;

- (b) applying an electrostatic charge to said powder;
- (c) contacting said substrate with said electrostatically-charged powder to form a powder coating on said substrate; and
- (d) curing said powder to form a cured coating on said substrate.

- 9. The process of claim 8 further comprising tetrabutyl ammonium bromide as a curing catalyst.
- 10. A coating powder having a low curing temperature and good flexibility in the coated and cured condition comprising an acid functional acrylic resin having an acid number between about 40 and about 220 and a polyester resin, said acrylic resin and said polyester resin being present in a weight ratio between about 30 parts acrylic resin to about 70 parts polyester resin to about 70 parts acrylic resin to about 30 polyester resin, an epoxy functional crosslinking agent having an epoxy equivalent weight between about 100 and about 1,000, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
- 11. The coating powder of claim 10, wherein said epoxy functional crosslinking agent comprises triglycidyl isocyanurate.
- 12. The coating powder of claim 10, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.

13. The coating powder of claim 10, wherein said crosslinking agent comprises at least two epoxy crosslinking agents having an epoxy functionality of about 2 to about 6 and an equivalent weight of from about 100 to about 700.
14. The coating powder of claim 13, wherein said crosslinking agent is present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.
15. A powder coated article comprising a substrate coated with a cured coating powder having good flexibility comprising an acid functional acrylic resin having an acid number between about 40 and about 220 and a polyester resin, said acrylic resin and said polyester resin being present in a weight ratio between about 30 parts acrylic resin to about 70 parts polyester resin to about 70 parts acrylic resin to about 30 polyester resin, an epoxy functional crosslinking agent having an epoxy equivalent weight between about 100 and about 1,000, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
16. The powder coated article of claim 15, wherein said epoxy functional crosslinking agent comprises triglycidyl isocyanurate.
17. The powder coated article of claim 15, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.
18. The powder coated article of claim 15, wherein said crosslinking agent comprises at least two epoxy crosslinking agents having an epoxy functionality of about 2 to about 6 and an equivalent weight of from about 100 to about 700.

19. The powdered coated article of claim 18, wherein said crosslinking agent is present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.
- 5 20. A process for coating a substrate comprising:
- (a) providing a coating powder comprising an acid functional acrylic resin having an acid number between about 40 and about 220 and a polyester resin, said acrylic resin and said polyester resin being present in a weight ratio between about 30 parts acrylic resin to about 70 parts polyester resin to about 70 parts acrylic resin to about 30 polyester resin, an epoxy functional crosslinking agent having an epoxy equivalent weight between about 100 and about 1,000, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0;
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- (b) applying an electrostatic charge to said powder;
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- (c) contacting said substrate with said electrostatically-charged powder to form a powder coating on said substrate; and
- (d) curing said powder to form a cured coating having good flexibility.
21. The process of claim 20, wherein said epoxy functional crosslinking agent comprises triglycidyl isocyanurate.
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22. The process of claim 20, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.
23. The powder coated article of claim 20, wherein said crosslinking agent comprises at least two epoxy crosslinking agents having an epoxy
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functionality of about 2 to about 6 and an equivalent weight of from about 100 to about 700.

- 5 24. The powdered coated article of claim 23, wherein said crosslinking agent is present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.
- 10 25. A coating powder having a low curing temperature and good flexibility in the coated and cured condition comprising an acid functional acrylic resin having an acid number between about 40 and about 220, an epoxy functional crosslinking agent comprising at least two crosslinking agents having an epoxy functionality of about 2 to about 6 and an equivalent weight of from about 100 to about 700, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.
- 15 26. The coating powder of claim 25, wherein one of said epoxy functional crosslinking agents comprises triglycidyl isocyanurate.
27. The coating powder of claim 25, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.
- 20 28. The coating powder of claim 25, wherein said crosslinking agent is present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.
- 25 29. A powder coated article comprising a substrate coated with a cured coating powder having good flexibility comprising an acid functional acrylic resin having an acid number between about 40 and about 220, an epoxy functional

crosslinking agent comprising at least two crosslinking agents having an acid functionality of about 2 to about 6 and an equivalent weight of from about 100 to about 700, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0.

- 5 30. The powder coated article of claim 29, wherein one of said epoxy functional crosslinking agents comprises triglycidyl isocyanurate.
31. The powder coated article of claim 29, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.
- 10 32. The powdered coated article of claim 29, wherein said crosslinking agent comprises at least two epoxy crosslinking agents present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.
- 15 33. A process for coating a substrate comprising:
- (a) providing a coating powder comprising an acid functional acrylic resin having an acid number between about 40 and about 220, an epoxy functional crosslinking agent comprising at least two crosslinking agents having an epoxy functionality of about 2 to about 6 and an
- 20 equivalent weight of from about 100 to about 700, and a curing catalyst, said coating powder having a stoichiometry of acid groups to epoxy groups of between about 0.5 and 2.0;
- (b) applying an electrostatic charge to said powder;
- (c) contacting said substrate with said electrostatically-charged powder to
- 25 form a powder coating on said substrate; and

(d) curing said powder to form a cured coating having good flexibility.

34. The process of claim 33, wherein one of said epoxy functional crosslinking agents comprises triglycidyl isocyanurate.

5 35. The process of claim 33, wherein said curing catalyst is a member selected from the group consisting of ammonium salts, phosphonium salts, and imidazoles.

10 36. The powdered coated article of claim 33, wherein said crosslinking agent comprises at least two epoxy crosslinking agents present in about 30 parts of a first crosslinking agent to about 70 parts of a second crosslinking agent to about 70 parts of a first crosslinking agent to about 30 parts of a second crosslinking agent, said parts based upon weight.